SARA SKYWAVES

KF5NBO

NOVEMBER 2019

MY CORNER OF THE SHACK

by John Smyder, W5JWS

I was sorry to have missed the Sachse Fall Fest this year and heard that y'all did a great job augmenting Sachse CERT in helping with communication. I also heard that Doug Priebe (AG5HB) did a great job manning the table. I also heard that Larry Hoffman (W5UWF) was fantastic as net control for CERT at this event. Thanks to all the club members who helped out. Y'all were in my thought while I was in Virginia visiting family and had to explain why I was so obsessed with the weather when the tornados came through. My cousin was shocked that I could hear what was going on real time using EchoLink and Broadcastify while I eves dropped on the active nets.

Thanks to Chance Lindsay (KC5EOK) for presenting information on the Sachse RACES/ARES organization. We do the siren tests every month and are available during storms too. This is a great way to serve your community using your ham license.

Out next 'big' thing is our annual Christmas Dinner coming up on December 7th at Napoli's in Wylie. We've got the back room reserved so if you and your family are planning to attend please send me an email at president@sachseradio.org or W5JWS@arrl.net with how many will be in your party so we can get a good count and make sure we have enough seats for everyone. We'll be doing some awards at this dinner this year too so make sure you are there.

Don't forget the Toys for Tots, get your unwrapped gift (no stuffed animals) to KG5CQO (Johnnie) on or before the Christmas dinner and she'll make sure those get to the folks in Sachse to help those less fortunate than us have a good holiday.

Planning for Winter Field Day (Jan 25/26) is well underway and Greg (KK6AXF) has a couple of volunteers to help but he could always use more (many hands make light work). So, if you can help drop Greg a note at KK6AXF@arrl.net.

I am really looking forward to this coming year. I expect a lot of fun and exciting things to be happening with the club. If you have any ideas for activities we could do this year please let Greg (KK6AXF) or any of the board members

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JOIN US ON THE AIR

SARA Weekly Information Net
When: Weekly on Wednesdays, 8:00pm – 8:30pm
Where: N5LOC (145.250, PL 141.3)

SARA Simplex QSO Net
When: Every 2nd and 4th Tuesdays, 7:30—8:30pm
Where: 146.400 (Simplex)

The Sachse Amateur Radio Association uses the N5LOC repeater in Sachse, TX:

- Frequency: 145.25 MHz
- Shift: -600 kHz
- PL tone: 141.3

... or in person

SARA Eyeball QSO Breakfast
Each Saturday 8-9am (some start arriving at 7:15)
Where: 7320 TX-78, Sachse, TX

SARA Monthly Meeting
When: Every 4th Thursday at 7:30pm
Where: The Sachse Public Library,
3815 Sachse Road Sachse, TX

REMEMBER!

No Club Meeting in November or December

NEXT SARA MEETING

Thursday January 23, 2020 at 7:30pm
Sachse Public Library Conference Room.

Topic: Club Repeater Discussion
Speaker: **John Smyder, W5JWF**

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know and we'll see what we can do to make it a reality.

I have a few winter projects lined up. One is reconfiguring my large go -box to support external 12VDC as well as AC with automatic switch over. I've also printed out the 'Slot-Cube Antenna for 6 Meters' article and want to build that antenna to see how it works on 6m. Another project is to take my homemade dual band vertical dipole that I shared with you a couple months ago in this newsletter. Then there is AREDN; thanks to KK6AXF I have both nodes properly configured and I need to get them retested with the node in Rockwall and also see if I can hit the nodes up in Sachse. Once I have that done I will get those nodes up and part of the mesh. Finally, and those who come to breakfast will appreciate this, I plan to get that 50' push up planted (it's only taken me a year) so I can get my end fed out of its current NVIS configuration.

That's my list of Ham things to do this winter, what is yours? Join us on the Wednesday night repeater net and tell us during "How Was Your Ham Week?"

We won't be having a general meeting this month or in December due to the holidays falling on, or very close to, our monthly meeting dates. So, please have a very happy Thanksgiving and I look forward to sharing more with you in next month's newsletter.

73, W5JWS – John S

Its that time of year, the struggle is real!

SARA Club Officers for 2019-2020

The standing 2018-2019 club officers were re-elected for the coming year with the exception of Jeff Lock, N5LOC and John Abbott, KF5FWK who have stepped down this year.

President	John Smyder, W5JWS
Vice President	Greg Kent, KK6AXF
Secretary	Johnnie Young, KG5CQO
Treasurer	David Mandala, KG5WFS
Public Information Officer	John Briggs, KC6TVF
Director at Large	Mark Mantooth, KI5CYA
Newsletter Editor	Steve Harbin, W5SOT

UPCOMING EVENTS

Dec. 7 - Christmas Party
The SARA Christmas party will be at 6:30pm on December 7th at Napoli's Restaurant at 701 TX-78, Wylie, TX. The price will $12. More details will be available at the next Club meeting.

Dec. 7 - SKYWARN Recognition Day
SKYWARN will mark its 20th anniversary on December 7, 0000 to 2400 UTC.

NO General Meeting Nov. or Dec!

Jan. 23 - SARA General Meeting
7:30pm at the Sachse Public Library. John Smyder is going to be presenting updates and options for a SARA Club repeater.

Jan. 26-27 - Winter Field Day
Planning has begun. Come try out a new rig, an old rig, or just come by and get some ideas.

Jan. 26 MARC 2M FM Simplex Contest
The contest helps us all be prepared in a number of ways, get to know one another, allow for friendly competition and try out our emergency preparedness skills.

June 12-13 - Ham Com
At the Plano Event Center

- One General Admission ticket is good for both days of the event.
- Online registration begins October 1, 2019 and ends May 31, 2020 at 11:59 PM.
- Online general admission tickets for adults are $8. Ticket prices are $10 if purchased at the event on the days of the event.

JOIN THE ARRL

As an ARRL member you support the ranks of thousands of other ham radio enthusiasts shaping the Amateur Radio service today. If you consider yourself an active ham... you need ARRL now. If you are not presently an active ham... let ARRL help you.

As a member of the ARRL, for as little as $49.00 per year, here are some of the benefits you will enjoy:

- *QST* Magazine – your monthly membership journal
- QST online monthly digital edition
- QST Archive and Periodical Search
- Product Review Archive
- Email forwarding
- E-Newsletters – delivered to your inbox
- A voice in the affairs of ARRL and ham radio through locally appointed volunteers
- Publication Specials and on-line course discounts
- Emergency Communication Services
- Technical and Regulatory Information Services
- Operating Awards
- Ham Radio Equipment Insurance Plan Available
- Outgoing Foreign QSL Service

Plus much more!

Take the next step in being an active participant in the future of ham radio. Join the ARRL today!

If you Prefer to Renew by Mail or Phone:

ARRL The national association for AMATEUR RADIO
225 Main Street, Newington, CT 06111-1400 USA
860-594-0200 or Toll-Free 1-888-277-5289

THEY GROW UP SO FAST

By John Briggs, KC6TVF

John and I were talking the other day about all the new hams in the club. They came in fresh from their Tech license. Could hardly spell amateur radio. Did not know a PTT from a VFO. The old timers mentored them through their first few times on the radio. They came out to ham radio in the park to learn new skills. Many have now upgraded to higher classes of licenses. Many have upgraded to HF radio. Now we are hearing them mentoring other hams. Increasing their skill sets with new modes and equipment. John and I looked at each other and thought, wow, this is what ham radio is all about. You plant the seed and watch it grow. Helping fellow hams learn and grow. Just goes to show that you really don't need to be the "old timer" to mentor others. Old timer now has a new meaning. You can be the young person and still be the "old timer". You can even be the young person and motivate the "old timers" to get off their duff and learn new skills. I love ham radio.

Thanks,

John Briggs, KC6TVF

What is Amateur Radio (Ham Radio?)

Amateur radio is a multifaceted hobby that includes people around the world. There are about 740,000 ham radio operators in the US. The FCC has allocated 30 different frequency bands from 135 KHz to greater than 275 GHz to amateur radio operators. These frequency bands are used for many different aspects of the hobby.

Some videos describing Amateur Radio:

https://youtu.be/ysOq6ywTSzU
https://youtu.be/rs0i0h4OyMo
https://youtu.be/5Z9136_Nhh4 - (Classic Walter Cronkite video)

Licensing:

There are 3 levels of ham radio licensing in the US, Technician, General and Extra. Each level requires passing a multiple choice exam. The questions used for these exams are all published on the web.

Study Aids:

Students can study for their license exam(s) in several different ways.

- Take a class
- Study training books.

These are two of the most popular

ARRL Technician Study Guide

Gordon West 2018 to 2022 Technician Class

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TOYS FOR TOTS

Last year the members of the Sachse Amateur Radio Association donated toys to The Sachse Area Toys for Tots Program. This donation provided 21 needy children with a gift for Christmas. The Sachse Amateur Radio Association will collect items again this year.

All toys must be unwrapped and stuffed animals are not permitted.

If you would like to donate a toy, the club will accept donations at their next meeting on Thursday, October 24th at the Sachse Library Meeting Room, or at the regular breakfast meeting at Woodbridge Café in Sachse each Saturday form about 7:00 am to 9:00 am., or and up until the Christmas Party Dinner December 7th for 6:30 pm at Napolis in Wylie. Donations are being collected by Johnnie Young, KG5CQO or can be given to any club officer.

If you would like to donate a toy but are unable to bring one at the times mentioned, please contact Johnnie at KG5CQO@arrl.net and she will be happy to make arrangements for the collection with you. Our goal is to collect more than 21 toys we collected last year. Please shop the sales there are many toys $10 and under that a needed child would love to have.

Many thanks to all who can help and a picture of the items collected will be in the December or January newsletter.

Johnnie Young KG5CQO

DID YOU KNOW?

There are some benefits to ARRL Membership that you might not be aware of. Most members know about the regular benefits like the Monthly QST subscription, the work that ARRL does to preserve the sport, and their role in sponsoring contests that challenge skills and gives participants opportunities to hone their radio-craft. But did you know about these?

ARRL Email Forwarding Service

E-mail forwarding service is now available for ARRL affiliated clubs: Effective immediately, clubs affiliated with the ARRL can sign up for the League's new E-Mail Forwarding Service. The forwarding service is available at no additional charge for ARRL affiliated clubs. It will provide clubs with a uniform "call sign@arrl.net" e-mail address that remains the same even if the user changes e-mail service providers.

Ham Equipment Insurance

No matter where you live, you could end up in the middle of a natural disaster. You may not be able to salvage what you had, but with the ARRL Ham Radio Equipment Insurance Plan you can get the help you need to get back on the air. Insurance is available to protect you from loss or damage to your amateur station, antennas and mobile equipment by lightning, theft, accident, fire, flood, tornado and other natural disasters.

For more details on these and other member benefits, check out both of these links!

http://www.arrl.org/membership

http://www.arrl.org/affiliated-club-benefits

HERE IS A FUN OPPORTUNITY!!!

McKinney Amateur Radio Club

MARC 2M FM Simplex Contest

Welcome to the Winter MARC 2M FM contest. The contest helps us all be prepared in a number of ways, get to know one another, allow for friendly competition and try out our emergency preparedness skills. Since this contest is limited to the 2 M FM band it does not require any fancy equipment and all can participate. The contest is just a short to time frame.

This is a great time for all local area hams to participate and join in the activity!

When: January 26, 2020 19:00 UTC to 22:00 UTC

Objectives: To make as many contacts as possible, encouraging the use of 2M simplex mode, and have fun!

The Hunter vs Hunted: Consider operating from a remote location, high point, or perhaps a roving mobile; Mobile stations are able to re-work stations from a different location.

Frequencies: The contest will take place solely on 2 meters bands using simplex mode; (e.g. no repeater contacts). According to the ARRL band plan, these frequencies **(between 146.40-146.58 & 147.42-147.57)** are for simplex use. For this contest we will use only these frequencies with a convenient 20 kHz separation.

146.4xx: 146.420, 146.440, 146.460, 146.480
146.5xx: 146.500, **not .520,** 146.540, 146.560
147.4xx: 147.420, 147.240, 147.460, 147.480
147.5xx: 147.500, 147.520, 147.540, 147.560

Exchange: Call sign, contact number, city or unincorporated county (UC). Rover stations should use the city or UC of their location at the time.

Example of Stationary Exchange:

"W5KZJ from K5CRX, please copy my #3 from Allen"
"K5CRX from W5KZJ, please copy my #4 from Wylie"

Example of Mobile/Rover Exchange:

"K5CRX from K5AMZ/M, please copy my #2 from Weston"
"K5AMZ/M from K5CRX, please copy my #4 from Allen"
You might want to consider verifying your time. Contact exchange must be within 15 minutes.

Contacts: Work as many different calls and locations as possible, giving the exchange as noted above. Work each station once per city or UC – i.e. Mobiles can be reworked whenever they change locations.

Scoring: Use the handy log and scoring sheet. Each Contact is worth 1 point

Multipliers: Number of unique cities or UC

Power: Stations running <=10 watts output: 3X score, 11<=50 output: 2X score, >50 watts output: 1X score

Final Score: Total Points=# QSO's X location mult. X Power mult.

Logging: Contest sheets can be downloaded from the MARC web site. www.McKinneyarc.org.

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Log Submission: Send completed electronic logs to: w5kzjham@gmail.com with
Subject of MARC 2M
Or send paper logs to:
MARC 2 Meter Simplex Contest
P. O. Box 276
McKinney, TX 75070-8135

Log Entry Submission Deadline: February 9, 2020

Denton County Cities:

Argyle	Denton	Highland Village	Pilot Point
Aubrey	DISH	Justin	Plano †
Bartonville	Double Oak	Krugerville	Ponder
Bolivar	Elizabethtown	Krum	Prosper †
Carrollton †	Flower Mound	Lake Dallas	Roanoke
Coppell †	Fort Worth †	Lakewood Village	Sanger
Copper Canyon	Frisco †	Lewisville	Shady Shores
Corinth	Hackberry	Lincoln Park	Southlake †
Corral City	Haslet †	Little Elm	The Colony
Cross Roads	Hebron	Northlake	Trophy Club
Dallas †	Hickory Creek	Oak Point	Westlake †

† *only a small part of the city extends into Denton County*

Collin County Cities:

Allen	Farmersville	Melissa	Richardson†
Anna	Frisco†	Murphy	Royse City†
Blue Ridge	Garland†	Nevada	Sachse†
Carrollton†	Josephine†	New Hope	St. Paul
Celina†	Lavon	Parker	Van Alstyne†
Copeville Unincorporated	Lowry Crossing	Plano†	Westminster Unincorpo-
Dallas††	Lucas	Princeton	rated
Fairview	McKinney	Prosper†	Weston
			Wylie††

† *City extends into one adjacent county.*
†† *City extends into two or more adjacent counties.*

Rockwall County Cities:

Dallas †	McLendon-Chisholm	Rowlett**
Fate	Mobile City	Royse City***
Heath*	Rockwall	Wylie****

† Dallas is a city primarily in Dallas County but a portion extends into Rockwall County due to the city's ownership of Lake Ray Hubbard.
*Heath is mainly a city of Rockwall County but a small portion extends into northern Kaufman County.
** Rowlett is mainly a city of Dallas County but a portion of it extends into Rockwall County.
*** Royse City is mainly a city of Rockwall County but a portion of it extends into Collin County and Hunt County.
**** Wylie is mainly a city of Collin County but a small part extends into Rockwall County and Dallas County.

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- View video classes
https://youtu.be/RGluTpM7_K8
https://www.youtube.com/watch?v=N6aFXH_SQUo&list=PL07A7D1C9D7BF7F48
- Take practice Exams
https://www.eham.net/exams

Taking the Exam:

Exams are offered by many clubs around the metroplex. The Sachse club gives exams 9:00 each 2nd Saturday at the Wylie Masonic Lodge.

Other Ham Radio Related Links:

Sachse Radio Club:
http://www.sachseradio.org/
Largest/Oldest Ham Radio Org:
http://www.arrl.org/home
Local Ham Radio Outlet Store
https://www.hamradio.com/locations.cfm?storeid=20
Finding a nearby Club:
http://www.arrl.org/find-a-club
Ham Radio Mesh Network:
https://www.arednmesh.org/aredn-advantage
Amateur Radio Satellites:
https://www.amsat.org/
Ham Radio Repeaters:
https://www.repeaterbook.com/

Other videos:

HAM Radios: Quick and Easy Way to Get Into HAM Radio Hobby:
https://youtu.be/t0sMDRLGB3Q

HAM Radio Basics- HAM 101:
https://youtu.be/Ow1hxClR5J8

Numerous Dave Casler Videos:
https://www.youtube.com/channel/UCaBtYooQdmNzq63eID8RaLQ

Space Station Crew Uses HAM Radio to Call Earth
https://youtu.be/h73EYcyszf8

Various Ham Radio Activities:

- Local/Regional communications
- World wide communications using Digital network linked repeaters
- World wide radio to radio communications
- Contests – Making as many contacts as possible
- Fox hunts – Finding a hidden transmitter
- Amateur Radio Satellite
- Supporting local events
- Races (marathons, bike races, etc.)
- Plano balloon festival
- Parades
- 4th of July events
- Extending RC aircraft video and telemetry
- Amateur Radio Emergency Data network (Network when the grid goes down.)
- Winlink – Email via ham radio
- Skywarn – Storm spotters (Most storm spotters report via ham radio.)

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Do you shop at Amazon?

Support the Sachse Amateur Radio Association!

What is AmazonSmile?

AmazonSmile is a simple and automatic way for you to support your favorite charitable organization every time you shop, at no cost to you. When you shop at smile.amazon.com, you'll find the exact same low prices, vast selection and convenient shopping experience as Amazon.com, with the added bonus that Amazon will donate a portion of the purchase price to your favorite charitable organization. You can choose from over one million organizations to support.

How do I shop at AmazonSmile?

To support SARA, simply go to smile.amazon.com from the web browser on your computer or mobile device and setup the organization that you want to support. You may also want to add a bookmark to smile.amazon.com to make it even easier to return and start your shopping at AmazonSmile.

You can purchase your general admission tickets online. You can also purchase general admission tickets at the Ham-Com Box Office on the day of the event. Ham-Com 2020 is June 12th and 13th.

IMPORTANT INFORMATION

- **One General Admission ticket is good for both days of the event.**
- Online registration begins October 1, 2019 and ends May 31, 2020 at 11:59 PM.
- Online general admission tickets for adults are $8. Ticket prices are $10 if purchased at the event on the days of the event.
- Online ticket purchases are NOT mailed! Purchases are to be picked up at the Ham-Com Registration Desk, located in the lobby of the Plano Event Center.
- Children 12 and under get in FREE!
- Scouts in full uniform get in FREE!

Online tickets can be securely paid using your credit card (Visa, MC, AmEx, Disc) through PayPal. You do not need a PayPal account!

https://sites.google.com/hamcom.org/ham-com/registration/general-admission

Fox Hunt… Anyone ?

Don't forget to RSVP to John Smyder if you are planning to attend the SARA Christmas Party. president@sachseradio.org

NEWSLETTER ARTICLES

Working on a project that you think the club members would be interested in? Read a good HAM related article somewhere? Send articles to Steve, W5SOT, at: newslettereditor@sachseradio.org

ACTIVITIES COMMITTEE

SARA vice-president Greg Kent, KK6AXF heads up the SARA Activities Committee. Anyone who is willing to help or has ideas may contact Greg, KK6AXF, at kk6axf@gmail.com.

EDUCATION TOPICS

SARA education director Leroy Michalow, K5AXP, can use your assistance. If you can suggest or provide an educational program for the weekly NET or for the monthly club meeting please contact Leroy at: kf5dat@gmail.com.

SARA BRANDED GEAR

We now have two suppliers for SARA gear. Both of these companies have our logo on file.

HamThreads will do hats, shirts, jackets and vests. They can do single items. HamThreads is in Saginaw.
https://www.hamthreads.com

Cactus Awards is local to Wylie and they specialize in Awards, Trophies, Plaques, Engraving and Embroidery as well as Tee -Shirt printing. Minimum order for some clothing is 3.
http://www.cactusawards.com

SARA NAME BADGES

If you need a SARA name badge please go to:
https://namebadge.com/sachse

Doing what you love doing...

Blog Post By David Mandala

Funny, I tend not to blog much but every once in a while, I get the urge.

Not too long ago someone asked me what I really love doing. As in what would I do for free every day if I could (assuming I did not have to worry about paying the bills and such). I thought about the question for a while and looked back over my years as a developer and manager of technical types and realized that I love creating new things that are needed by someone, I also love teaching folks about technology. That explains why some jobs in my past have resonated with me more than others.

I recently took a small contract that was really fun, I got an email from a gent that wanted to send Morse Code via light. He wanted to be able to type a paragraph of text and send it over and over again via a light and not just any light, a bright enough light to cover a mile or more of distance. He had a few more requirements:

- It had to be self-contained, and portable
- Water resistant to water mist and or light rain
- Easy to use, he did not want to learn Morse Code, just wanted to type text and have it sent as Morse Code
- Able to send the text as Morse Code somewhere between 5 words per minute (WPM) and 75 WPM

As it turns out I am an amateur radio operator (HAM) here in the US and I have my general license (still studying for my extra license), so I know about Morse Code, but I can't actually send or receive it. I tried back in the 70's to learn it but never could wrap my brain around it. Seems to fit in the same general area as speaking and understanding other human languages besides English (I can't do that either). I've tried to learn Spanish, Italian, Esperanto and Klingon. I've never had any success, the closest I've come is I can count to 39 in Spanish…. and that was with 6 years of training in elementary school.

Hardware

Thinking over his requirements, I realized I needed some kind of a waterproof case about briefcase size, perhaps a bit deeper than a normal briefcase to allow for a large light to be stored in the case when not in use.

Clearly needed to be some kind of embedded computer to create the text and control the light. Cheap and small, how about a Raspberry Pi (Rpi) model 3B? It's small, easy to program, has lots of general-purpose input output pins (GPIO) and has an HDMI monitor output. Perfect. Of course, if you are going to have a computer you need a keyboard/mouse and a display.

All simple enough. Now what kind of light will be bright enough to be seen a mile away and yet be controllable to be able to send Morse Code. Needs to be bright, really bright. Can't use Halogen, that gets too hot and will keep glowing even when the power is removed, incandescent same problem, florescent does not turn on fast enough and keeps glowing also. LED fit the requirement – it turns on and off fast and it's very bright. When you replace a household 100 watt light with an LED you usually replace it with an 8 watt

LED, so what if I use a 100W LED? I hunted around and find a 100W spotlight that is normally used on trucks that go off-roading. Now that is BRIGHT, slight problem however it uses 12VDC – 30VDC for power and requires up to 8 amps of current. Video of a super bright LED light flashing on a blue wall.

We have a computer and monitor that use 5VDC to run, the LED light that requires somewhere between 12V and 30VDC and is high amperage at least compared to the GPIO pins of the Rpi. For easy portability powering it from 12VDC makes sense, that is easily available from a vehicle or a wall power supply.

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Some bigger trucks use 24VDC so keep that in mind when designed the circuit….. OK I found a DC to DC step down power supply that can handle up to 35VDC input and can output 5VDC regulated for the Rpi and Monitor. Now all I had to handle was the current for the LED spotlight. First thought is use a cheap 5VDC mechanical relay, the Rpi can control a 5DCV relay easily, except one problem. Sending text at 75WPM means that the transition speed between on and off is fast, very fast, in fact much faster than a mechanical relay can handle. So back to the drawing board…… Wait one, how about a solid-state DC relay? 3 – 32VDC input for control – 5VDC input from the Rpi check that works, can switch 5 – 200VDC output – the LED light works on 12 – 30VDC, check that works too. Alright a solid-state relay it is. Solid state relays can generate heat so make sure I get a heat sink made for the relay. Some miscellaneous other parts, wires, mounts, case, etc and we are off to the races:

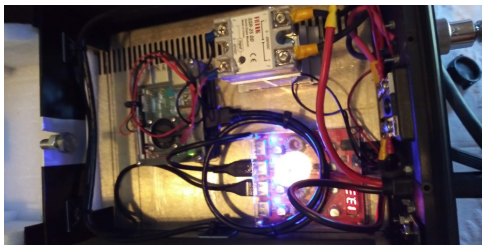
So far we have about a $800 parts list:

- VideoSecu LCD LED Monitor TV Wall Mount
- SAE Cable – iGreely Solar Weatherproof SAE Socket Sidewall Port
- MUYI 2 Set Inline Fuse Holder 10 Gauge Waterproof Pigtail Blade Fuse Holder
- Kenowa Portable Monitor 11.6 Inch 1920X1080 IPS with 2 Mini HDMI USB(5v)
- Logitech K400 Plus Wireless Touch TV Keyboard with Easy Media Control and Built-in Touchpad
- RS Components Raspberry Pi 3 B+ Motherboard
- Miuzei Raspberry Pi 3 B+ Case with Fan Cooling
- Seahorse SE-720 Waterproof Protective Hardcase Without Foam (Black)
- DROK Buck Converter Voltage Regulator DC 5V Power Supply
- Blue Sea Systems DualBus 100A BusBar – 5 Circuit
- Universal Compact Bench Power Supply – 30 Amp Regulated
- Universal 6″ LED Spot Lights For Cars – 100W Bright 8000LM LED Off-Road Spotlight
- TinaWood SSR-25DD Solid State Relay 25A 3-32V DC/5-200V DC
- 8’ Aluminum angle
- A 1/8” sheet of Aluminum to bolt the computer hardware too.
- Misc bolts, pop-rivets and connectors.

Time to build the system into a solid system. I took the Seahorse case and built an aluminum frame that had 3 compartments, 1 for the LED light, 1 for the computer, relay and DC-DC power supply, and one for the keyboard storage. The entire frame was pop-riveted together, painted black and then the frame was riveted to the 1/8” aluminum sheet. Then nuts and bolts were used to secure it inside the case.

The LED compartment had a slot to allow the LED to be bolted down so the LED could not bounce around in the case, if that happened it would be a disaster, the light was big enough and heavy enough to break everything else in the case if it broke loose. The Monitor mount was bolted to the inside of the lid of the case and the flat panel monitor mounted to it.

Now wire up the Rpi, monitor, solid state relay and step-down power supply. Plug in the external power and it works, it powers up and I get the Rpi logo on the monitor. Fantastic.



Now we need some software.

Software

I had told the gent that I was going to use Open Source software on his project, fortunately he knew what Open Source software is so I did not have to explain that to him. I installed Raspbian on the Rpi and did a search for any Open Source application that sent Morse Code, I found only a few. I downloaded the source code to all of them and had a look. My original plan was to crib as much as possible from an application and only write the controlling aspects. No luck there. The few applications I found were not suitable for the project. Most were for learning Morse Code, the best was fldigi that is a radio control application, but it was far too complex for the project.

So I had to design from scratch an application that could take a paragraph of text and send it via flashing the LED light. I called the command line application “morse”, I know really original. I used the “C” language as I wanted the application to

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be compiled and fast. Morse code is "interesting" it's all about timing, more about that below.

Quick Primer on Morse Code

Morse Code is all about the dot. All the timing in Morse code is based off the time of the dot. So:

- A dot is one time unit.
- A dash is three dot time units.
- A dot dot or dot dash or dash dash separation is one dot time unit.
- A letter separation is three dot time units.
- A word separation is seven dot time units.

How fast a dot is depends on how many words per minute you are sending, and from there cascades the rest of the timing. There are two type of timing: "Standard" and "Farnsworth", the "morse" application can do both types. For more info lookup Morse Code on a search engine.

I designed the application in several sections.

1. First, I built a header file that was a lookup table of dot and dashes for each Morse Code letter and punctuation. I ended up building the lookup table for most of the entire ASCII table with either dots and dashes or NULL's for things not in Morse Code.
2. The next thing I did was write the code to display a letter from the lookup table from that I added the ability to process and display an array of text. That all ended up being in a single C file called "display_morse.c".
3. Now that I could display text, I needed a way to load a text file into memory so it could be displayed, that ended up being in a file called "process_file.c".
4. Next I needed a way to tell the application the name of the file to load, speed to display it, how many times to loop displaying it, etc. all of that ended up going into a file called "process_command_line.c".
5. Of course if you are taking command line input it might be handy to also have config files that set the defaults so you don't have to use the command line options, that ended up being in a file called "process_config_file.c".
6. Finally all "C" applications start with a main() function that is in the file called "morse.c" and the include file called "morse.h" which contains the master structure of variables needed to control the application.

The application is under the gpl v2 license and is available on github It does use two library's one of the library's is specific to the Rpi to run the GPIO pin that controls the LED light and would need to be replaced if a different embedded hardware system is used, the other library is to parse command line options and can be used no matter what hardware platform is chosen.

It was truly a fun project and met his needs. It's used on a really large field where they fly drones and don't allow any radio communications except the drone controllers. Turns out there are apps that will read Morse code signals sent on light by cell phones! Who would have thunk??? So you can receive Morse code via your cell phone for short range communications but for truly long range well that is where a special project like this comes in. So, if you need a special device and you can't buy it on Amazon or at Target or some other store, and you really need it, get it touch with me and likely I can create it for you.

WHAT ARE YOU WORKING ON?

I know that many of us have projects going on that other in the club would love to hear about. Consider writing it up for the newsletter. …

Here are just a few that I know about:

- Greg, John Briggs and John Smyder are working on AREDN projects.
- Lonnie was going to review a new nanoVNA $50 analyzer.
- Steve Harbin built a motorized HF antenna lift and may be going into production.
- Mike MsCafferty is working on a stealth antenna/weather station and a stealth fox-hunting setup.
- Several people are working on antenna projects, field day setups, and other miscellaneous endeavors.
- Several people have been involved in fox-hunting activities.

I would also like to encourage everyone to write a short article about how you became a Ham. Its interesting to know why people become interested and involved with the hobby.

Send your submissions to newslettereditor@sachseradio.org by the third Thursday of the month to be included in the next issue of

SACHSE SKYWAVES !

If you made, or plan to make the Buddipole, check this out!

THE BUDDIPOLE™ QUICK-FIX for NVIS

The Buddipole Quick-fix for NVIS on the Lower Bands

One of the best and most-used antennas for NVIS, or Near Vertical Incidence Skywave, is a dipole low to the ground. You can take a standard Buddipole and turn it into an excellent antenna for local communications on 40, 60, and 80 Meters.

Make up two identical wire assemblies as follows: Wind 31 feet of wire on each of the linewinders. Solder or crimp a 3/8" ring connector on the loose ends of each assembly. Attach the ring connector to the female opening at the end of each coil by using the 3/8 by 24 threaded bolts. The wires on each side of the coils will slope down from the T when the mast is raised to about 9 feet off the ground. Keep the wires off the ground by at least two feet by using non-conductive electric fenceposts (or similar stakes) for that purpose. Follow the chart below to determine the wire lengths. You can paint colored marks on the wire to show the lengths of that wire needed for the band you wish to use. The coils are not tapped for 80 Meters, but are tapped for 60 and 40 Meter operation. *Note:* Always count tap settings from the WIRE SIDE of the coil.

Parts list

- > 2 kite linewinders. Something to hold the wire. Reels OK too.
- > 2 pieces of insulated wire 31' long, wire size 18 to 22
- > 2 bolts, 3/8 by 24 threads, each inch long
- > 2 Ring connectors to hold the wire in place on the coils
- > 2 non-conducting electric fenceposts or wooden stakes

SETTINGS

	RED SIDE		BLACK SIDE	
Bands	*Wire length*	*Tap*	*Wire length*	*Tap*
80 METERS	28'	No	29'	No
60 METERS	12'	Tap 37	15'	No
40 METERS	14'	Tap 16	17.5'	Tap 20

Set the Buddipole up as you normally would. The RED COIL goes on the left, or hot side of the coax and the BLACK coil goes on the ground side of the coax. Leave the whips OFF the coil ends. The wire assemblies will provide the extra length needed to make the antenna resonate on the lower bands.

As for tuning this antenna, I used an MFJ Analyzer to set the wire lengths and tap positions. You should be able to get very close to resonance with those settings. You can go up and down in frequency with a tuner or by shortening and lengthening the wires on each side of the dipole by winding the wire on and off the linewinders.

BUDDIPOLE
3155 SW 234th Avenue, Unit B
Hillsboro, OR 97123
503.591.8001 phone
503.214.6802 fax
info@buddipole.com
www.buddipole.com

QSO Breakfast Pictures

October 19, 2019

October 26, 2019

November 9, 2019

November 16 , 2019

Monthly Meeting
October 24, 2019

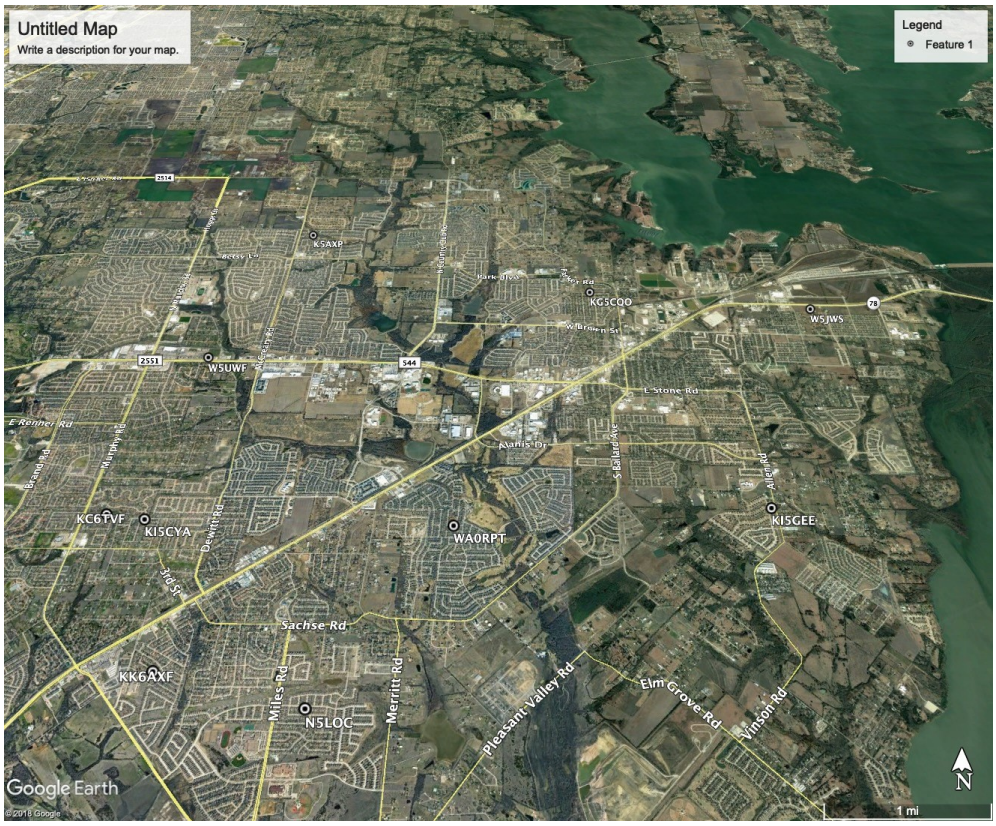
The meeting this month features Chance Lindsey sharing about the Sachse RACES and ARES programs.

Newsletter Editor's Report (WSSOT)
• Newsletter Posted to Web Site
• Send Pictures and Articles to the Newsletter Editor!!!
• NewsLetterEditor@sachseradio.org

Ham, Continued from page 7

- Amateur Radio Emergency Services (ARES)
- Radio Amateur Civil Emergency Services (RACES)
- Antenna design/building
- CW (Morse code) communications
- DXpeditions – Location in an remote area (usually islands) for a short period of time and making as many contacts as possible.
- Summit On the Air – Transmitting from mountain summits
- JOTA - Jamboree-on-the-Air with Boy Scouts
- RF experimentation.
- Many Maker groups
- High altitude balloon experiment.

SIMPLEX NET COVERAGE



The map to the left shows the location of the net check-ins for the net on October 8th. It shows one area we are addressing as a club as we practice simplex nets, which might be necessary if the repeater went down in the time of need. If you are reading on a computer, zoom in to get a better look at the callsign locations.

The map to the right shows the coverage with lines drawn at the boundries of the participants for the net that week. The numbers show the approximate distance in miles.

Sachse Amateur Radio Association Meeting Minutes September 26, 2019

Start time: 7:30 pm
Location: Sachse Library
Facilitator: Greg Kent (KK6AXF); Vice-President

Opening
John Briggs (KC6TVF)
- Opened the meeting by leading the Pledge of Allegiance
- Everyone introduced themselves, gave their call sign and position in the club

Attendees
- 15 members
- 0 guests

New member – David Conant – KI5FEQ
New call sign – Mike McCafferty – N5MMC

President's report – John Smyder (W5JWS)
- Not in attendance
- Greg Kent – KK6AXF
  - Presented the report
- Next board meeting is November 14th
- Next general meeting is January 23rd, 7:30 pm
- Christmas Party – December 7th for 6:30 pm at Napoli's in Wylie
  - $12 a person (excluding drinks and tip)
- Toys for Tots
  - Unwrapped toys (no stuffed animals)
  - Bring any time to Johnnie Young (KG5CQO)
  - Bring to breakfast and give to any officer
  - Bring to the Christmas Party (final day)
  - E-mail Johnnie Young – KG5CQO at kg5cqo@arrl.net
    - If you can not make any of these times

Vice-President – Gregg Kent (KK6AXF)
- Simplex Net Report
  - Displayed map showing participants and coverage
- Activities Committee
  - Sachse Fall Fest
    - Saturday, October 26th, 10 am to 5 pm
    - Need volunteers for club table
    - Have ARDEN – large populated areas and parking
    - CERT – will need help with communications
  - Winter Field Day
    - January 25th and 26th
    - Need a committee
    - Send e-mail to Greg Kent – KK6AXF
      - To vicepresident@sachseradio.org
      - Other ideas?

None at this time

Secretary – Johnnie Young (KG5CQO)

Minutes for the September meeting are posted on the web site, published in the newsletter and in a folder on the back table
Motion to accept – David Mandala (KG5WFS)
2nd to accept motion – Greg Kent (KK6AXF)
All agreed – motion passed

Treasurer – David Mandala (KG5WFS)

Financial sheet was displayed and reviewed
Motion to accept – Johnnie Young (KG5CQO)
2nd to accept motion – Tricia Lindsey (K5TIL)
All agreed – motion passed

Information Officer – John Briggs (KC6TVF)

Saturday – QSO breakfast @ Woodbridge Cage @ 8:00
Next VE Session – November 9th, Wylie Masonic Lodge
Fall 2019 West Gulf Division S E T, November 9th, 8 am to 4 pm
Objective – assess ability of Amateur Radio Service to respond to a major event and exchange supporting info throughout the Division
Need volunteers for NCS repeater
October 30 Greg Kent – K6AXF
November 6 Jenny Wood – KC5GNI
November 13 John Smyder – W5JWS
November 20 Johnnie Young – KG5CQO
November 27 Jenny Wood – KC5GNI

Simplex Net NCS
November 12 Greg Kent – KK6AXF
November 26 Greg Kent – KK6AXF or Johnnie Young (KG5CQO)

Newsletter editor – Steve Harbin (W5SOT)

Not in attendance
Greg Kent – KK6AXF
Presented the report
News letter was sent via e-mail and is on the SARA web site.
Always can use news articles and recipes
Take pictures at all events & send to the new Newsletter editor
Steve Harbin (W5SOT)
at newslettereditor@sachseradio.org

Director-at-Large – Mark Mantooth (KI5CYA)

Not in attendance
Nothing to report

Education Officer – Leroy Michalow (K5AXP)

Not in attendance

Greg Kent – KK6AXF

Presented the report
Need ideas for future meetings
Please help with subject matter
Schedule

November – no meeting – Thanksgiving Day
December – no meeting – Day after Christmas

Break: 7:50

Bill Caldwell – AC5BC

Explained about a S E T and mentioned maybe the members could participate as a club

Greg Kent – KK6AXF

Would mention this to the President – John Smyder – W5JWS

Reconvened: 8:10

Sachse ARES/RACES -- Chance Lindsey – KC5EOK

ARES – ARRL partnership with the government
RACES – Is from the Federal Government and you join through the Government

The Fire Chief or emergency manager co-ordinate the local ARES/RACES
Mostly used for public events
All areas use ARES/RACES differently

NWS – National Weather Service – monitors major weather events
Typically, these groups give visual reports to help

Chance Lindsey – KC6EOK gave an informative presentation which was followed by a question and answer session.
Thanks, Chance

Motion to adjourn – David Mandala – KG5WFS
2nd the motion – John Briggs – KC6TVF
All agreed
Meeting adjourned – 9:00 pm

Sachse Amateur Radio Association Weekly Repeater Net Script

Version: 5.0 - October, 10 2019

Good evening and welcome to the "*Ham Radio in Sachse*" Weekly Information Net. My name is (*name, call sign*), and I will be your net control this evening. (***pause)*** This net is heard every Wednesday evening at 8:00pm on the N5LOC repeater, which is on a frequency of 145.250 using a PL tone of 141.3. All licensed amateurs are invited and encouraged to participate, whether you are a club member or guest. (***pause)***. This is a Directed Net. Please do not transmit unless directed to do so by Net Control. If at any time, you have an emergency to report, break in by saying "Priority" or "Emergency" followed by your call sign and the net will stand by. An emergency is defined as the imminent threat to life or property. **Is there any emergency, priority or time sensitive traffic at this time? *Pause***

Check-Ins:
Before we begin, we will be taking check-ins, three at a time. If you would like to check into this net, please give your call sign phonically, your name and repeat your Call Sign alphanumerically slowly, so Net Control can write it down. (*write down and read back call signs of check ins*). (Remember: Echo Link users (if any) need a few extra seconds to respond).

Club Announcements: ***Now is a good time for Net Control to ID.***
Our first topic will be announcements from club officers. Any club officer on the net with an announcement, please give your call sign now.

Member & General Comments: ***Now is a good time for Net Control to ID.***
Our next topic is member & general comments. Any member of the Sachse Amateur Radio Association, or anyone else on this net, who would like to make a comment, please give your call sign now.

Tech Talk: ***Now is a good time for Net Control to ID.***
Our next topic is Tech Talk. Ask any questions you may have of a technical nature regarding amateur radio or computers. Feel free to share any information or share comments that you find to be valuable with the group. If anyone has an item for Tech Talk, please give your call sign now.

Swap Shop: ***Now is a good time for Net Control to ID.***
Our next topic is Swap Shop. Anyone wishing to buy, sell, trade, or give away items related to ham radio or computers is invited to do so. Please do not haggle over price on the air. If anyone has an item for Swap Shop, please give your call sign now.

Education: ***Now is a good time for Net Control to ID.***
Our next topic is Education. Anyone who has an education presentation they would like to make or want to suggest an item for a future presentation, please give your call sign now.

How Was Your HAM Week: ***Now is a good time for Net Control to ID.***
Now for the fun part of our hobby, which our next topic is called "***How Was Your HAM Week***". This exercise allows any station to share anything related with HAM Radio, since our last Net Control or Monthly Meeting. Example topics can be "DX'ing Observations", "Experiences", "Challenges", "Lesson-Learn with your equipment", or even "Victories on a project". The goal of sharing is to forge relationships, as we are currently enjoying the hobby. Whether you are a member or guest, this exercise is voluntary. No station is under obligation to share anything. As your Net Control, I will start by briefly sharing my "Ham Week". Once done, I will then ask if any station would like to share their "Ham Week". Simply give your Call Sign and Net Control will recognize the station and give you the platform to share.
(*Net Control – provide positive feedback on their topic.)*

Late Check-Ins: ***Now is a good time for Net Control to ID.***
Next Net Control would like to take late check-ins. If there are any late check-ins, whether RF or Echo Link, please give your call sign and name slowly and clearly. (*write down and read back each call sign*).

Last Call:
Before we conclude the net, is there any other Stations wishing to report into the Net and/or have any comments?

Wrap-Up: ***Now is a good time for Net Control to ID.***
This concludes the "Ham Radio in Sachse" Weekly Information Net. If you would like more information about the Sachse Amateur Radio Association, please visit our web site at www.sachseradio.org. This is (*call sign*) and we now return the N5LOC repeater to its normal use.

Sachse Amateur Radio Association Simplex Net Script

Version: 5.0 - October 10, 2019

Good evening and welcome to the "*Ham Radio in Sachse*" Simplex Net. My name is (*name, call sign*), and I will be your net control this evening. This net can be heard every 2nd and 4th Tuesday evening at 7:30 pm on a frequency of 146.40 Simplex. Therefore, there is no need for an offset or PL tone. All licensed amateurs are invited and encouraged to participate, whether you are a club member or a guest. This is a Directed Net. Please do not transmit unless directed to do so by Net Control. At the end of check-ins, I will ask for relays of check-ins I acknowledged, that you did not hear, and check-ins that I did not hear. Near the end of the program, I will ask for a signal report. If at any time, you have an emergency to report, break in by saying "Priority" or "Emergency" followed by your call sign and the net will stand by. An emergency is defined as the imminent threat to life or property. **Is there any emergency, priority or time sensitive traffic at this time?** ***Pause - hearing none…***

Check-Ins:
We will start by taking check-ins, three at a time. If you would like to check into this net, please give your call sign phonically, then your name, and then your call sign alphanumerically, so Net Control can write them down. Please come now in groups of 3.
(*write down and read back call signs of check ins*).
When there are no more check-ins, go through the list and ask if anyone heard a check-in that you did not acknowledge or if there is a check-in that they did not hear.
You may have to pick a relay person for the night.
If you had to pick a relay person or persons, then remember to stop after each conversation and have the relay person pass that information on.

Club Announcements: *Now is a good time for Net Control to ID.*
Our first topic will be announcements from club officers. Any club officer on the net with an announcement, please give your call sign now.

Member & General Comments: *Now is a good time for Net Control to ID*.
Our next topic is member & general comments. Any member of the Sachse Amateur Radio Association, or anyone else on this net, who would like to make a comment, please give your call sign now.

Tech Talk: *Now is a good time for Net Control to ID*.
Our next topic is Tech Talk. Ask any questions you may have of a technical nature regarding amateur radio or computers. Feel free to share any information or share comments that you find to be valuable with the group. If anyone has an item for Tech Talk, please give your call sign now.

Education: *Now is a good time for Net Control to ID*.
Our next topic is Education. Anyone who has an education presentation they would like to make or want to suggest an item for a future presentation, please give your call sign now.

Signal reports: *Now is a good time for Net Control to ID*.
Next, we will discuss signal reports. How does net control and/or the check-ins come across. I will go down the list of check-ins so everyone can give a response. Please use the plain language radio checks provided on the Sachse Radio web page.
(For example; net control was loud and clear.) Also please include your power level at the end of you signal report.
(You start.)

Late Check-Ins: *Now is a good time for Net Control to ID*.
Next Net Control would like to take late check-ins. If there are any late check-ins, please give your call sign and name slowly and clearly.
(*write down and read back each call sign*).
Remember to ask if there are any check-ins you did not acknowledge or check-ins that others did not hear.

Last Call:
Before we conclude the net, are there any Stations wishing to report into the Net and/or have any comments?

Wrap-Up: *Now is a good time for Net Control to ID.* This concludes the "Ham Radio in Sachse" Simplex Net. If you would like more information about the Sachse Amateur Radio Association, please visit our web site at www.sachseradio.org. This is XXXXXX and we will now return this frequency to its normal use

Do you need to join or renew your membership in the Sachse Amateur Radio Association?
Print this page, fill it out, and bring the form to the next club meeting.
Sachse Amateur Radio Association Membership Application

Sachse Amateur Radio Association Sachse, Texas 75048-3696 www.sachseradio.org kf5nbo@gmail.com

Type of Application: New Member ☐ **or Renewal** ☐ **Date:**_____

Your Call Sign:_____ **Your License Class:**_____

Your Name:_____ **Spouses Name:**_____

Address:_____

City:_____ **State:**_____ **Zip:**_____

Home Phone:_____ **Work Phone:**_____

Cell Phone:_____ **Email:**_____

Membership Types: Please check only one option below:

☐ **Regular:** A regular member shall be any FCC licensed amateur radio operator who does not fall under the special provision of an associate or student membership. Regular member dues are $25.00 per year unless prorated (see below).

☐ **Family:** A family membership shall be any FCC licensed amateur radio operators and non-licensed family members interested in amateur radio who live in the immediate household. Family member dues are $30.00 per year unless prorated (see below).

☐ **Associate:** An associate member shall be any person maintaining membership to support the association but who does not hold a license as a radio amateur. Associate member dues are $10.00 per year and are not prorated.

☐ **Student:** A student member shall be any FCC licensed amateur radio operator who is currently enrolled as a full time student, is 18 years of age or younger, and is not otherwise eligible to be included in a family membership. Student member dues are $10.00 per year and are not prorated.

If selecting Family membership, please list the family members covered by this application.

Name:_____ **Email:**_____ **Call Sign (if any):**_____ **Lic Class:**_____

Name:_____ **Email:**_____ **Call Sign (if any):**_____ **Lic Class:**_____

Membership Dues: (Please check only one)

Dues are initially paid upon joining the association. Renewal dues are paid no later than the September meeting each year. A new application must be submitted each year as well. Dues are reduced (prorated) for Regular and Family members (only) who join or renew their membership after Dec 31st:

☐ Joining Sep 1 thru Dec 31, pay $25.00 for Regular dues, or $30.00 for Family dues.
☐ Joining Jan 1 thru Mar 31, pay $18.75 for Regular dues, or $22.50 for Family dues.
☐ Joining Apr 1 thru Jun 30, pay $12.50 for Regular dues, or $15.00 for Family dues.
☐ Joining Jul 1 thru Aug 31, pay $6.25 for Regular dues, or $7.50 for Family dues.

TOTAL DUE: $_____

Are you a current member of the ARRL? ☐ YES or ☐ NO (please chose one).

By submitting this application, either by hand or any electronic means, you hereby agree to abide by the rules and regulations of the Sachse Amateur Radio Association.

Signature:_____